Sign languages feature pairs made up of semantically and formally related nouns and verbs, some of which are phonologically identical, and others phonologically distinct. The latter exhibit a distinction based on temporal characteristics of movement (length and frequency). However, this distinction is not constant and tends to disappear in context, yielding identical phonological forms for the noun and verb. This raises the following question: what criteria make it possible to identify the grammatical category (i.e., noun or verb) of a sign? In order to answer this question, I have analyzed a corpus of natural and spontaneous discourse. I have identified all phonologically identical N/V pairs from our corpus and described the members of these pairs in terms of specific semantic and morphosyntactic criteria. Our results show that the category of a sign can be identified with the help of morphosyntactic criteria, of which the most salient is use of space.

1. Introduction

Sign languages exhibit a large number of noun-verb pairs (from now on, N/V pairs) whose members are related both in respect of meaning and in respect of form. LSQ, the sign language of Quebec, is exemplary in this regard: not only does it abound in such pairs, but many of these are made up of formally identical elements, both in citation form and in context (Bouchard et al., 2003). The primary goal of this paper is to describe the formal, semantic and morphosyntactic characteristics of LSQ nouns and verbs in a natural discourse context.

First, I discuss the general aspects of N/V categorization in sign languages and the difficulty of determining criteria for identifying categories. Second, I present the predominant criteria in the literature used to distinguish the categories N and V in languages in general, and in sign languages in particular. Finally, I present our description of the nouns and verbs from our corpus.

2. Problem Description

In the first dictionary of American Sign Language (ASL), published in 1965 (Stokoe, Casterline and Cronenberg, 1965), semantically and formally linked nouns and verbs are
described as being identical from a phonological point of view; that is, they are taken to have the same handshape, place of articulation, orientation and movement.

Such pairs of phonologically identical nouns and verbs are also present in LSQ. For example, in the pair WORK/TO-WORK the noun and verb have exactly the same phonological makeup. Pairs of phonologically identical nouns and verbs of this type have also been described in Australian Sign Language (Auslan; Johnston, 2001) and in Italian Sign Language (LIS; Pizzuto and Corazza, 1996).

Among the N/V pairs described by Stokoe, Casterline and Cronenberg (1965), Supalla and Newport (1978) identified certain pairs in which the noun and the verb are (in fact) phonologically distinct. In these pairs, the noun and the verb share the same handshape, orientation and place of articulation, but they differ in respect of movement. Pairs of this type were subsequently identified and described in several sign languages, including Quebec Sign Language (Dubuisson et al., 1999).

Table 1 shows descriptions of movement carried out by several authors for different sign languages. Supalla and Newport (1978) have described, amongst other things, two temporal characteristics of movement in respect of which nouns and verbs differ. These characteristics, which are also mentioned by all of the other authors listed in the table, are frequency of movement and length of movement, and each has two possible values. Movement can be either single or repeated on the one hand, and either long or short, on the other. The difference between a noun and a verb lies in the opposition of these values.

<table>
<thead>
<tr>
<th>Language</th>
<th>Frequency</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
<td>Repeated</td>
</tr>
<tr>
<td>ASL</td>
<td>V</td>
<td>N</td>
</tr>
<tr>
<td>LSF</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>AUSLAN</td>
<td>V</td>
<td>N</td>
</tr>
<tr>
<td>NZSL</td>
<td>V</td>
<td>N</td>
</tr>
<tr>
<td>LIS</td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

Table 1: Movement in Phonologically Distinct N/V Pairs

With the exception of Supalla and Newport (1978), characteristics of noun and verb movement are essentially the same in the bulk of the descriptions that I have examined. Although certain authors describe movement only in terms of length (Moody, 1983, for LSF) or in terms of frequency (Collins-Ahlgren, 1990, for NZSL), there is always an opposition of length or frequency between the form of the noun and that of the verb. We will return shortly to the semantic value which, according to Supalla and Newport (1978), is carried by repetition.

In LSQ, the N/V pair CHAIR/SIT have the same handshape, place of articulation and orientation, but they differ in movement. The noun CHAIR has a short, repeated movement, while the verb SIT has a long, simple movement (Dubuisson et al., 1999).

Bouchard et al. (2003, for LSQ) and Johnston (2001, for Auslan) have observed that in an elicited context, phonologically distinct N/V pairs in citation form do not systematically maintain their distinctive characteristics. That is, the phonological distinction of movement
tends to weaken or disappear in context. Thus, Bouchard et al. (2003) have shown that within the same utterance, two occurrences of the same sign can differ in movement, one being simple and the other repeated.

Given that the majority of N/V pairs in LSQ are phonologically identical and that phonologically distinct N/V pairs can lose their distinction in context, I will seek to answer the following question: what are the characteristics which make it possible to distinguish a noun from a verb in context?

3. Theoretical framework

Traditionally, linguistic categories have been defined in terms of properties common to (belonging to) all of their members. These properties are for the most part formal, semantic and syntactic. For most authors, these three types of properties are intimately linked, though the relative importance assigned to each type in defining categories depends largely on the school of thought and the theoretical assumptions of each author.

Several authors (Sapir, 1921; Robins, 1952; Jacobsen, 1979; among others) have founded the distinction between nouns and verbs on formal, semantic and syntactic properties.

Certain scholars, however, have suggested that the noun-verb category division is irrelevant and unfounded, arguing that the distinction is purely functional, in that it is imposed by discourse and not by the nature of what is being represented by the noun or verb elements (Hopper and Thompson, 1985). In the field of sign language studies, the works of Johnston (2001) for Auslan and Bouchard et al. (2003) for LSQ also argue, to differing degrees, that the traditional noun-verb distinction is irrelevant, and that a functional distinction is more appropriate. Thus, for these authors, nouns and verbs of this type differ with regard to their syntactic and pragmatic functions.

In the literature on sign languages, three types of properties have been used to distinguish nouns from verbs (see table 2). The first set of characteristics we shall discuss is phonological. As I have already shown in Table 1, phonologically distinct pairs have been described in terms of temporal characteristics of movement: noun movement is described as short and repeated, while verb movement is described as long and single.

In addition to these features, Johnston (2001) proposed another phonological characteristic involved in the noun-verb distinction. During a task aimed at eliciting the production of nouns and verbs in context, this author noticed that the nouns were accompanied by word-mouthing (that is, while producing the Auslan sign, the signer mouthed the corresponding English word). For the noun forms produced in context, Johnston found more occurrences of word-mouthing than of repetition. He thus suggests that word-mouthing is used as a strategy in Auslan to identify the grammatical category of an isolated sign.

Certain authors also argue that the N-V distinction can be carried out on the basis of semantic characteristics (Supalla and Newport, 1978 for ASL; Cuxac, 1997, for LSF). Noting that frequency and length of movement can vary for both nouns and verbs, these scholars analyze movement variations as having an aspectual value. The repeated movement typical of nouns is phonological and carries no semantic features. Repeated movement for the verb, on the other hand, carries two aspectual values: “durative” and “iterative”. In LSQ, aspect can be expressed by lengthening, frequency or modification of rhythm (Dubuisson et al., 1999). This is the case for durative aspect, which is expressed by lengthened movement,
often accompanied by repetition and an oval form. Iterative aspect, which signals a series of delimited, repeated actions, is characterized by the repetition of movement.

<table>
<thead>
<tr>
<th>Type of Characteristic</th>
<th>Characteristic</th>
<th>Noun</th>
<th>Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonological</td>
<td>movement : length et frequency</td>
<td>noun movement is short and repeated</td>
<td>verb movement is long and single</td>
</tr>
<tr>
<td></td>
<td>mouth movements</td>
<td>nouns are accompanied by mouthing of words</td>
<td>verbs are accompanied by expressive mouth movements</td>
</tr>
<tr>
<td>Semantic</td>
<td>aspectual modification of movement</td>
<td>aspect is expressed on verb</td>
<td></td>
</tr>
<tr>
<td>Morphosyntactic</td>
<td>use of space</td>
<td>nouns are assigned to spatial loci</td>
<td>verbs re-use the spatial loci assigned to nouns</td>
</tr>
<tr>
<td></td>
<td>possession</td>
<td>the possessive mark is used only with nouns</td>
<td></td>
</tr>
<tr>
<td></td>
<td>negation</td>
<td>negation bears on the verb</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Noun verb distinctions in sign languages

In the following example, the sign TO-CONTACT is repeated. This repetition gives the sign an iterative interpretation.

INDEX3(dy) 3d-TO BE-USED-TO 3d-TO-CONTACT++-6b DEAF(b) DIRECTLY

*It (the Human Rights Commission) is used to repeatedly contacting deaf people directly.*

Bouchard *et al.* (2003) argue on the basis of elicited data that morphosyntactic characteristics make it possible to distinguish nouns and verbs in context. These authors suggest three distributive characteristics to be used in the N-V distinction in LSQ: use of space, possession and negation.

First of all, the space surrounding the signer can be used to express relations between sentence elements. More specifically, in discourse, a noun can have a spatial *locus* (i.e. a point in space) assigned to it; the latter acts as a permanent abstract representation of the former within the signing space and can be subsequently reused within the discourse in order to establish a relation between the noun and some other discourse element (Parisot, 2003). In order to assign and reuse a *locus*, the signer may use spatial marks such as an index, non-manual signals (e.g. shift of gaze, sideways tilting of the shoulder and/or trunk), classifiers, localized verbs or signing of the lexical element directly on the point in space with which it is to be associated (Dubuisson *et al.*, 2000; Parisot, 2003).

39 The letters *x, y, z* represent the *loci* to which the signs are assigned. Plus signs indicate the number of repetitions of the sign. Letters *a, b, c* are semantic indices.
In example 0 below, the signer assigns the noun to a *locus* to his left by directing his eyes towards the latter.

WHEN INDEX1(a) 1-TO-ORDER-3b PIZZA(b) RESTAURANT(c)(Ey)\(^{40}\)

*When I order pizza at a restaurant.*

In example 0, the sign TELEPHONE reuses the *loci* assigned to SRB (in front of the signer) and to PIZZERIA (to the signer’s left). Notice also in this example the agreement of the verb TO-GIVE which is not a member of a N/V pair, with the *loci* corresponding to 1st person singular and to SRB.

FIRST NUMBER(b) TELEPHONE(b) 1-TO-GIVE-3a SRB(a) INDEX(ax) AFTER 3a-TO-TELEPHONE-3c

*First one must give the telephone number to SRB. Then SRB telephones (the pizzeria).*

In example 0, the sign TO-CONTACT reuses the *locus* previously assigned to the sign DEAF, to the right of the signer. The second *locus* used by the verb for agreement is assigned to the noun FRIEND just after the verb. The noun FRIEND is signed directly on its *locus* and is also assigned to the *locus* through the index which follows it.

BUT FOR 3-TO-CONTACT-3c FRIEND(c)(Ez) MORE PRIVATE

*[It’s alright for ordering a pizza] but for contacting a closer friend [it’s not that great]*.

The second distinguishing morphosyntactic characteristic is that the possessive can only be used with nouns: Bouchard *et al.* (under press) argue that the possessive marker POSS. is only used with nouns, never with verbs. In possessive constructions, the marker POSS. is signed immediately after the the possessed object; this signing takes place on the *locus* of the possessor. In example (5), the sign RACHEL is first localized on the *locus* x. The sign CAT is then produced, followed by the marker POSS., which is signed on the *locus* x in order to establish the link between RACHEL and CAT.

YESTERDAY RACHEL(ax) CAT(b) POSS.(a) 3b-RUN-AWAY

*Rachel’s cat ran away yesterday.*

The third distinctive characteristic is that negation bears only on the verb or verb phrase. In LSQ, negation can be expressed by a shaking of the head simultaneous with the production of the verb phrase. This non-manual signal begins at the same point in time as the verb and continues until the end of the verb phrase regardless of the type of constituent that follows the verb or other predicate (Berthiaume and Rinfret, 2000).

4. Objectives

In light of the works I have just cited, which all focus on the description of corpora consisting of elicited data, our contribution will consist in describing the form and the

\(^{40}\) Eyegaze is represented by the letter E.
morphosyntactic characteristics of LSQ nouns and verbs in a natural discourse context. More specifically, we will describe 1) the phonological characteristics of N/V pairs from our corpus and 2) the semantic and morphosyntactic characteristics of phonologically identical N/V pairs.

Our first specific objective will allow us to verify whether both the temporal, phonological distinction contained in the movement of the sign and the mouthing of words make it possible to identify the category of a sign produced in a natural and spontaneous discourse context.

Our second specific objective will allow us to answer the question whether distinction between the two categories is possible on the basis of semantic and morphosyntactic characteristics of the elements.

5. Methodology

The context which I have used is that of natural discourse produced by a native LSQ signer in the form of a 30-minute interview bearing on everyday topics. In this corpus I identified 551 items, of which 289 were nouns and 262 were verbs.

I analyzed these nouns and verbs in terms of the phonological and morphosyntactic features presented above.

6. Results

Table (3) shows the phonological characteristics of the nouns and verbs of our corpus. We would normally expect to see a majority of nouns with short, repeated movement and a majority of verbs with long, single movement. Surprisingly, we can see that there are as many long, single movement nouns as long, single movement verbs. Moreover, short, single movement nouns outnumber short, repeated movement nouns. The phonological criteria of length and frequency are thus little help to us in determining the syntactic categories of the signs.

Using phonological characteristics, I identified 12 identical pairs in context. The occurrences of nouns and verbs are displayed in the middle columns.

For each of the nouns and verbs in the corpus, I observed either word-mouthing or expressive mouth movements produced simultaneously with the sign. In general, I remarked, as does Johnston (2001), that nouns occur more often than verbs with word-mouthing and that expressive mouth movement co-occurs more frequently with verbs.

Table 4 shows the morphosyntactic and distributive characteristics of the members of each pair of phonologically identical nouns and verbs. Among these elements, the majority of the nouns are identifiable as such due to the fact that they are assigned to a spatial \textit{locus}, and the bulk of the verbs can be distinguished by the reuse of spatial \textit{loci}.
<table>
<thead>
<tr>
<th></th>
<th>Short and single</th>
<th>Short and repeated</th>
<th>Long and single</th>
<th>Long and repeated</th>
<th>Mouthing of words</th>
<th>Expressive mouth movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>All nouns</td>
<td>16</td>
<td>72</td>
<td>176</td>
<td>25</td>
<td>273</td>
<td>13</td>
</tr>
<tr>
<td>All verbs</td>
<td>12</td>
<td>38</td>
<td>176</td>
<td>36</td>
<td>155</td>
<td>51</td>
</tr>
<tr>
<td>Nouns from identical N/V pairs</td>
<td>0</td>
<td>10</td>
<td>11</td>
<td>4</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Verbs from identical N/V pairs</td>
<td>0</td>
<td>15</td>
<td>8</td>
<td>7</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Identical N/V pairs</td>
<td>0</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3: Phonological characteristics of nouns and verbs from the corpus

<table>
<thead>
<tr>
<th></th>
<th>Use of space</th>
<th>Possession</th>
<th>Negation</th>
<th>Aspectual modification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assignment</td>
<td>Reuse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N from identical N/V</td>
<td>35</td>
<td>NA</td>
<td>2</td>
<td>n/a</td>
</tr>
<tr>
<td>V from identical N/V</td>
<td>n/a</td>
<td>70</td>
<td>n/a</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4: Morphosyntactic characteristics of N/V pairs

In order to account for all of the occurrences of nouns and verbs, we need to take into account the noun complement construction in addition to the possessive construction. In this construction, which involves the juxtaposition of two nouns, there are three possibilities: 1) only one noun is localized; 2) one noun reuses the _locus_ of the other; 3) neither noun is localized (Dubuisson _et al._, 2000). Among the corpus nouns which belong to N/V pairs, two POSS. eared in a noun complement structure.

I did not find any verb that could be distinguished due to negation. The most likely reason for this is that the number of pairs of identical nouns and verbs I found in the corpus is relatively small.

Aspectual modification is exemplified by only one of the corpus verbs belonging to an identical N/V pair. I believe that this fact can be attributed to two factors: first, because few nouns and verbs are phonologically identical in our corpus, and second, because aspectual modification affects the movement of the verb with regard to its citation form.

7. Conclusion

Our results show that the temporal phonological characteristics of movement (length and frequency) of the elements from our corpus do not, in general, make it possible to identify the grammatical category of a sign in context. Word-mouthing, on the other hand, appears to be closely associated to nouns, and expressive mouth movement seems intimately linked to
identical noun-verb pairs in quebec sign language

verbs. Nonetheless, these two phonological features, when taken alone, are not sufficient for the noun-verb distinction.

As we have seen, the majority of members of phonologically identical N/V pairs can be distinguished by their morphosyntactic characteristics. We have seen that use of space is the feature which most often makes possible the noun-verb distinction in context. Still, I realize that (despite the general tendencies) certain contexts allow the reuse of spatial loci by nouns (e.g. possessive construction, noun complement construction), and that certain verbs allow the assignment of spatial loci (locative constructions) (Dubuisson et al. 2000). It seems that use of space is linked to associative relationships between elements (regardless of their category) rather than to the nature of each element’s lexical category.

References


